ABSTRACT

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Diploma thesis title: Evaluation of activity of potentional antibacterial substances through the use of microdilution broth method

Objective

The occurrence of resistant bacteria strains is the global problem today, which influences everyone´s life. One of the way, how to solve this problem, is to develop new effective antibacterial substances. The goal of the diploma thesis was to test 70 potencial medical drugs and find out their antibacterial activity against selected bacteria strains.

Methods

The minimal inhibitory concentrations of tested substances, affecting the growth of the most common 8 conditionally pathogenic bacteria, including significant resistant strains such as MRSA and *Klebsiella pneumoniae* producing extended specter beta lactamase, were monitored by microdilution broth method.

Results

Tested substances were divided into eight groups according to their chemical structure and then their antibacterial effect was compared. The most effective group was presented by salicylanilide and its derivates. The influence of the chemical structure and production of clot in growth medium of these substances on their effect was discussed as well.

Conclusions

Antibacterial effect of 14 substances was noticed from all tested potencial drugs. They belong primarly just into three groups: salicylanilide and its derivates, sulphonamides and benzylaminopyrazines The effectivity of substances from the same chemical group was influenced by kind and position of bound substituents. Grampositive bacteria were more sensitive than gramnegative ones. The most sensitive was *S. aureus*.

Key words: resistance, antimicrobial substances, microdilution broth method, minimal inhibitory concentration